REMARKS

By this paper, Applicant has amended Claims 1-5, 12, 14-16, 20, 31, 33, and 37-39. Claims 26-30, 34-36, and 40-81 have been canceled. Claims 82-99 have been added. Hence, Claims 1-25, 31-33, 37-39, and 82-94 remain pending and are presented for further examination.

I. Interview with Examiner

Applicant wishes to thank the Examiner for the telephonic interview of February 23, 2007. A summary of the interview is attached hereto. Applicant believes the interview was helpful in advancing the case and invites the Examiner to call the undersigned if there are any remaining questions that might be resolved by further telephonic discussion.

II. Rejection of Claims 14-31 and 37-81 under 35 U.S.C. § 101

In paragraph 1 of the Office Action, the Examiner rejected Claims 14-31 and 37-81 under 35 U.S.C. § 101 as being drawn to nonstatutory subject matter. Applicant respectfully disagrees with these rejections.

Applicant respectfully submits computer-related inventions are directed to patentable subject matter so long as the "claimed invention "transforms" an article or physical object to a different state or thing." *See* USPTO Interim Guidelines for Examination of Patent Applications (O.G. Notices, November 22, 2005). *See, e.g., In re Lowry*, 32 F.3d 1579, 1583-84, (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory). Applicant respectfully submits that a method of processing an input state to provide an output from an electronic device indicative of a classification of the input state, such as are recited in independent Claim 31, recites such a transformation of the electronic device to a different state. For example, one embodiment includes an improved method of classifying data to generate an output of an electronic device. Accordingly, Applicant submits that Claims 31 (and claims 37-39, which depend from Claim 1) do recite patentable subject matter.

III. Rejection of Claims 1, 14, 17, and 18 under 35 U.S.C. § 102(b) in view of Katz

On page 4 of the Office Action, the Examiner rejected Claims 1, 14, 17, and 18 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,943,661 to Katz. For the reasons set

forth below, Applicant respectfully submits that Claims 1, 14, 17, and 18, as amended, are patentable.

A. Brief description of one embodiment

One embodiment comprises a method and system in which training data that includes biomedical signal data associated with medical conditions of a particular patient is used to train a neural network that recognizes signal patterns of the particular patient associated with particular medical events in that particular patient. *Specification* (as publication), paragraph [0009]. For example, in one embodiment, data derived from EEG readings of a particular patient, and associated with seizure and non-seizure periods, is used to train a neural network to recognize and report seizures in a medical instrument. *See Id.* Desirably, one embodiment of the disclosed system uses a neural network architecture, e.g., a probabilistic neural network, that can be reconfigured in real time to adapt to additional training data, e.g., misclassified biomedical data such as a falsely reported seizure or an unreported seizure.

B. Katz fails to teach or suggest all elements of Claim 1, as amended

Applicant submits that Katz merely describes a generic method of training a neural network. In contrast, Claim 1, as amended, recites a method of detecting medical events in a medical instrument, the method comprising:

> collecting a plurality of training cases in a medical instrument, wherein each training case has an input state indicative of at least a portion of a first biomedical signal of a particular patient and a corresponding output value indicative of a medical condition of the particular patient;
>
> generating a neural network based on the plurality of training cases in the medical instrument;
>
> receiving a second biomedical signal of the particular patient in the medical instrument;
>
> applying the second biomedical signal to the generated neural network to generate an output of the neural network; and
>
> identifying a condition of the particular patient based the output of the neural network.

(emphasis added). Applicant respectfully submits that neither Katz, nor any of the other art of record, teaches or suggests the particular method of method of detecting medical events in a medical instrument, including "identifying a condition of the particular patient based the output of the neural network," as recited by Claim 1, as amended. Accordingly, Applicant submits that Claim 1, as amended, is patentable. Further, as each of Claims 14, 17, and 18, depends, either

directly or indirectly, from Claim 1, Claims 14, 17, and 18 are allowable for each of the same reasons.

IV. Rejections of Claims 31 under 35 U.S.C. § 103(a)

On page 27 of the Office Action, the Examiner rejected Claim 31 under 35 U.S.C. § 103(a) as being rendered by Katz in view of U.S. Patent No. 6,324,532 to Spence, et al ("Spence"). In particular, the Examiner indicated that while Katz does not teach "reconfiguring the neural network based on the first training case without retraining the neural network," Spence teaches such. However, for the reasons set forth below, Applicant respectfully disagrees.

In particular, the Examiner takes the position that Spence teaches "reconfiguring the neural network based on the first training case without retraining the neural network" because, referring to Figure 11, "[i]f item 1110 were to be pruned, this would not affect item 1114 thus no retraining required." *Office Action* at 27. However, Applicant submits that nowhere does Spence disclose pruning of anything with reference to Figure 11. Applicant is therefore unsure of where such disclosure is to be found. Moreover, Spence discloses using a plurality of interconnected networks. Moreover, Applicant submits that nowhere else is this disclosed in Spence. Even if Spence somehow were to disclose "pruning" network 1114 from the illustrated network of networks in Figure 11, Applicant submits that this pruning would not constitute a disclosure of "reconfiguring the neural network to correctly classify the first training case without retraining the neural network" as recited by Claim 31, as amended, because it is not apparent how this pruning of a network would result in "reconfiguring the neural network to correctly classify the first training case." Hence, Applicant submits that Spence fails to disclose or render obvious "reconfiguring the neural network," which the Examiner admits is not disclosed by Katz. Accordingly, Applicant submits that Claim 31 is patentable.

V. Rejections of Claims 2-25 and 32-38 under 35 U.S.C. § 103(a)

On pages 6-61, the Examiner rejected Claims 2-25 and 32-38 in view of various combinations of the references of record. However, for the reasons discussed above, Applicant submits that independent Claims 1 and 31 are patentable. Accordingly, as each of Claims 2-25 and 32-38 depends from one of Claims 1 or 31, Applicant submits that each of those claims is patentable for at least the same reasons.

VI. Conclusion

Applicant has endeavored to address all of the Examiner's concerns as expressed in the Office Action. Accordingly, amendments to the claims, the reasons therefor, and arguments in support of patentability of the pending claim set are presented above. Any claim amendments which are not specifically discussed in the above remarks are made in order to improve the clarity of claim language, to correct grammatical mistakes or ambiguities, and to otherwise improve the clarity of the claims to particularly and distinctly point out the invention to those of skill in the art. Finally, Applicant submits that the claim limitations above represent only illustrative distinctions. Hence, there may be other patentable features that distinguish the claimed invention from the prior art.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections and, particularly, that all claims be allowed. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully invited to call the undersigned. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: March 1, 2007

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